

WHAT IS CLAIMED IS:

1. A method of reading out signal charges from a solid-state image sensor, comprising:

a first step of preparing a solid-state image pickup apparatus comprising a solid-state image sensor having a plurality of photosensitive cells arranged in a bidimensional array for converting incident light to electric signal charges, each of the plurality of photosensitive cells including a main region and a subregion smaller in area than the main region, the apparatus executing signal processing on pixel data produced from the signal charges;

a second step of causing the solid-state image pickup apparatus to perform preliminary image pickup of a scene;

a third step of determining a luminance distribution representative of the scene subject to the preliminary image pickup on a basis of pixel data obtained from a plurality of blocks formed in the bidimensional array to calculate an estimated photometric value that estimates the scene;

a fourth step of comparing the estimated photometric value with a predetermined threshold value, above which a dynamic range is effective which defines a reproducible range of the incident light;

a fifth step of controlling the image sensor, if the estimated photometric value is smaller than the threshold value, to read out the signal charges generated in the main region and the subregion of each of the photosensitive cells while mixing the signal charges with each other for the photosensitive cell; and

a sixth step of controlling the image sensor, if the estimated photometric value is not smaller than the threshold value, to read out the signal charges generated in the main region and the subregion of each of the photosensitive cells individually from each other.

2. The method in accordance with claim 1, wherein said fourth step further comprises a substep of selecting either one of said sixth step and said fifth step in dependence upon whether or not the plurality of blocks contain blocks which have the estimated photometric value not smaller than the threshold value and exceed in number a predetermined threshold number.

3. The method in accordance with claim 1, wherein said fifth step further comprises a substep of causing one of two signal processing lines, which respectively process the pixel data derived from the main region and the subregion, to operate while interrupting an operation of another of the signal processing lines and an operation of mixing pixel data processed by the two signal processing lines to broaden the dynamic range.

4. The method in accordance with claim 2, wherein said fifth step further comprises a substep of causing one of two signal processing lines, which respectively process the pixel data derived from the main region and the subregion, to operate while interrupting an operation of another of the signal processing lines and an operation of mixing pixel data processed by the two signal processing lines to broaden the dynamic range.